

National Aeronautics and
Space Administration

Educational Product

Educators

K-12

EP-2002-11-408-HQ



CENTENNIAL OF FLIGHT

EDUCATOR'S ELECTRONIC TOOLKIT



Centennial of Flight Educator's Electronic Toolkit is available in electronic format through NASA Spacelink—one of the Agency's electronic resources specifically developed for use by the education community.

This publication and other educational products may be accessed at the following address:

<http://spacelink.nasa.gov/products>

CENTENNIAL OF FLIGHT EDUCATOR'S TOOLKIT

The NASA Educational Technology Program researches and develops products and services that facilitate the application of technology in the classroom. In recognition of the "Centennial of Flight," a special electronic-based "Toolkit" has been developed that includes a wide variety of online exploration tools and provides educators with a framework for implementing an electronic learning support system around the centennial of flight theme.

As a part of this experience, NASA would like to encourage educators to share their technology-enriched experiences with others. To facilitate this process, electronic templates have been provided in the "Centennial of Flight Educator's Electronic Toolkit." The information that is submitted via the templates will be posted on this site, allowing educators to share valuable opportunities and experiences with one another.

As always, NASA is interested in receiving feedback from educators about the content and value of its educational products. Your comments will be used to improve the "Centennial of Flight Educator's Electronic Toolkit" and extend the concept to additional theme areas in the future. Information about how to access the electronic feedback forms is described in this document. Your comments and suggestions are always helpful and much appreciated.

NASA is committed to developing exciting technology-based educational tools that will help inspire the next generation to spread their wings and expand their horizons. We look forward to continuing to develop cutting-edge classroom-based educational technologies as we celebrate the first century of flight and anticipate the possibilities for the future!

WEB-ENHANCED LEARNING EXPERIENCES

Computers, Curriculum, and Centennial. Grab that computer mouse and join NASA for investigations into a Century of Flight! Five types of online experiences are highlighted to get educators and students started. A "starter collection" for these five Web experiences has been created to span the grade levels (K-4, 5-8, 9-12), as shown in the table on the next page.

Further information on each of the Web types and the "starter collection" activities can be found on the back side of the poster "The 1902 Glider: How the Problem of Control was Solved." This poster can be accessed online from NASA Spacelink—NASA's electronic library to NASA's educational resources—located under the category heading of "Educational Wallsheets" at

<http://spacelink.nasa.gov/products>

Do you have an activity to add to the collection? Online templates for each type of Web activity have been generated. Educators are encouraged to share ideas and ways to integrate activities into the curriculum. All submissions are reviewed before being added to the collection. If your submission is activated on the NASA Celebrates Web site, you will receive an e-mail from NASA. The templates can be accessed at

<http://www.aerospace.nasa.gov/edu/templates.html>

Orville Wright wrote of his childhood that "[w]e were lucky enough to grow up in an environment where there was always much encouragement to children to pursue intellectual interests; to investigate whatever aroused curiosity." Today we have a challenge to provide the same environment for our children.

Just as the Wright brothers pursued their personal passion for powered flight, we must allow all children to pursue their individual interests through the power of technology. Used appropriately, technology gives us a way of personalizing instruction for every student based on his or her needs, and based on ways that they learn and that are relevant for them.

The Wright brothers set us on the path of a technological century. As we embark on a new century of discovery, we must give our children the tools necessary to succeed. Just as the Wright brothers used the technology available to them at the time, we believe that schools should use technology as a tool to improve academic achievement, and that using the latest technology in the classroom should not be an end unto itself.

John Bailey
Director, Office of
Educational Technology
U.S. Department of Education



NASA seeks to involve the educational community in the development and improvement of experiences such as the online activities. Your evaluation and suggestions are vital to our continually improving activities. Please take a moment to provide us with feedback on the Centennial of Flight Starter Collection of Web activities. The feedback form can be accessed and submitted at the following Internet address:

http://ehb2.gsfc.nasa.gov/edcats/cfscwa_teacher_form.html

EDUCATIONAL ACTIVITIES

FIVE TYPES OF WEB-BASED EXPERIENCES LEVERAGING NASA ELECTRONIC RESOURCES

<http://www.aerospace.nasa.gov/edu/webexp>

	Grades K–3	Grades4–6	Grades 7–9	Grades 10–12
Topic Hotlist	Wings and Things That Fly Flight Famous Fliers Aeronautics Paper Airplanes	Wheels to Wings Aerospace Careers Are for Everyone! Toys That Fly	Flight, Born of Dreams Aerospace Careers Are for Everyone! Why Fly? The Next 100 Years of Flight	Flight, Born of Dreams Forces of Flight Why Fly? The Next 100 Years of Flight
Multimedia Scrapbook (Only one has been produced for use by all grades.)	Links to media and content for presentations	Photographs, maps, stories	Facts, quotations, videos	Sound clips, virtual reality tours
Treasure Hunt	Wind Beneath My Wings	The Wright Information	Higher, Faster, Farther Toys That Fly Famous Pilots Challenge	Higher, Faster, Farther Toys That Fly Famous Pilots Challenge
Subject Sampler	Wings and Things That Fly	From Pilots to Passengers A Place for Me in Aerospace	Evolution of Wings A Place for Me in Aerospace	Evolution of Wings
WebQuest	Famous Aviators	The Wing Warping Controversy Wind Tunnels and Discovery	The Wing Warping Controversy From Wright Flyer to Mars Airplane	Wing Warping Controversy From Wright Flyer to Mars Airplane Forces of Flight



EDUCATOR FOCUS

A FOCUS ON THE EDUCATOR

NASA has many valuable Internet resources for educators. Educator Focus provides background information and other helpful tips related to using NASA educational products and services. Below are several recommended Educator Focus articles to support the educator during and following the Centennial of Flight celebration. Educator Focus articles can be accessed from NASA Spacelink at

<http://spacelink.nasa.gov/Educator.Focus>



CENTENNIAL FEATURE

Across the Curriculum with the Wright Brothers—NASA, in association with the U.S. Centennial of Flight Commission, is providing educational materials and resources in support of the celebration of the 100th anniversary of the Wright brothers' historic flight on December 17, 1903. This Educator Focus article will guide you through available resources, both explaining NASA's participation in this once-in-a-lifetime event and detailing online materials available for teachers and students.

OTHER RECOMMENDED ARTICLES:

Searching NASA—If you're like most people, you have spent countless hours searching for information on the World Wide Web. It can be a frustrating and fruitless endeavor at times. However, understanding how to use search engines efficiently and effectively can considerably cut your frustration and time spent.

NASA Spacelink in the Classroom—The Internet has become an educational resource that can be exciting but rather intimidating to those who have not had the time or resources to explore its possibilities. Do you want to join educators who use technology in the classroom but feel unsure how to begin? NASA Spacelink can help.

Curriculum Support Materials Are No Mystery If You Know Where To Look—Are you searching for up-to-date educational resources for your mathematics, science, or technology class? Pop on your investigative hat and follow an educator tracking down instructional materials and Web sites available from NASA.

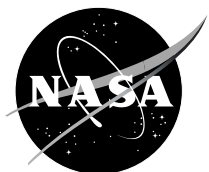
How to Participate in NASA Interactive Internet Projects—Join us for a brief description about what's available from NASA via the Internet through interactive projects, the benefits, and how to get involved.

I Want My NTV—NASA Television is a resource designed to provide real-time coverage of Agency activities and missions, as well as providing resource video to the news media and educational programming to educators, students, and the general public.

Educator Focus Evaluation—Educators, once you have used an Educator Focus article, please consider providing feedback to NASA on the value and use of the article in your classroom or personal application. An Educator Focus evaluation can be submitted at the following Internet address: http://ehb2.gsfc.nasa.gov/edcats/spacelink_edctr_reply_card.html

Educator Focus Suggestion Box—Submit your ideas for new Educator Focus topics at

<http://spacelink.nasa.gov/Educator.Focus/suggestions.html>



NASA EDUCATOR RESOURCES



READY, SET, GO!

The world of NASA is just a click away. Here are some Centennial Web resources to get you started.

U.S. Centennial of Flight Commission Web Site

<http://www.centennialofflight.gov>

Re-Living the Wright Way

<http://wright.nasa.gov>

Celebrating Flight

<http://spacelink.nasa.gov/celebratingflight>

OTHER RECOMMENDED WEB SITES

NASA Home Page:

The NASA Home Page is full of late-breaking news and links to NASA's most popular sites:

<http://www.nasa.gov>

NASA Education Home Page:

NASA educational programs and resources information is available at

<http://education.nasa.gov>

NASA Educational Products:

Many of the official NASA educational products are on NASA Spacelink at this location:

<http://spacelink.nasa.gov/products>

Spacelink EXPRESS:

Be first! Join the Spacelink EXPRESS mailing list and receive e-mail announcements of new educational materials produced by the NASA Education Division.

<http://spacelink.nasa.gov/xh/express.html>

Central Operation of Resources for Educators (CORE):

NASA educational multimedia materials are available for a minimal fee from NASA CORE at

<http://core.nasa.gov>

NASA Educator Resource Centers:

The purpose of the NASA Educator Resource Center Network (ERCN) is to help teachers learn about and use NASA's educational resources. ERCs provide inservice and preservice training using NASA instructional products. Educators also have the opportunity to preview, copy, and receive NASA instructional products.

<http://spacelink.nasa.gov/ercn>

NASA Educational Television:

NASA Television is a resource designed to provide real-time coverage of Agency activities; resource video to the news media; and educational programming to teachers, students, and the general public. To learn more about the NASA TV education schedule, check out

<http://spacelink.nasa.gov/education.file>

The greatest mission this Agency has ever accepted is helping to open the mind of a child to unimagined possibilities.

Sean O'Keefe
NASA Administrator



LEAVING NO CHILD BEHIND

The U.S. Department of Education, in partnership with NASA's Centennial of Flight initiative, has new legislation that relates to many of the activities you will find in this Electronic Educational Toolkit.



On January 8, 2002, President Bush signed into law the No Child Left Behind Act of 2001 (NCLB). This new law represents his education reform plan and contains the most sweeping changes to the Elementary and Secondary Education Act (ESEA) since it was enacted in 1965. It changes the Federal Government's role in prekindergarten-through-grade-12 education by asking America's schools to describe their success in terms of what their students accomplish. The act contains the President's four basic education reform principles: stronger accountability for results, increased flexibility and local control, expanded options for parents, and an emphasis on teaching methods that have been proven to work.

No Child Left Behind creates math and science partnerships to rally every sector of society to work with schools to increase mathematics and science excellence.

- The National Science Foundation and the U.S. Department of Education will provide an estimated \$1 billion over 5 years for results-oriented partnerships between local districts and universities and colleges.
- Partnerships will also invite businesses; professional associations of mathematicians, scientists, and engineers; science centers; museums; and community organizations to unite with schools to improve achievement.
- The program also encourages states to increase participation of students in advanced math and science courses and to increase passing rates on Advanced Placement exams.
- To ensure accountability, the partnerships must report annually to the U.S. Secretary of Education on progress in meeting their set objectives, aligned with state standards.

The President has called for an increase in the ranks and pay of teachers of mathematics and science.

- No Child Left Behind requires states to fill the Nation's classrooms with teachers who are knowledgeable and experienced in mathematics and science by 2005. The President supports paying mathematics and science teachers more to help attract experience and excellence.

No Child Left Behind calls for research on the best ways to teach mathematics and science and regularly measure student progress.

- No Child Left Behind requires that Federal funding go only to programs that are backed by research-based evidence.
- The new law requires states to measure students' progress in mathematics annually in grades 3 through 8, beginning in 2005.
- The new law also requires that, beginning in 2007, states measure students' progress in science at least once in each of three grade spans (3–5, 6–9, and 10–12) each year.
- Over the last decade, researchers have scientifically proven the best ways to teach reading. We must do the same in mathematics and science. America's teachers must be able to use only research-based teaching methods, and the schools must have alternatives to unproven fads.

NCLB expands options and provides better information on education.

- Several components of No Child Left Behind allow schools to purchase technology resources to support program goals. The result is technology aligned with specific goals tied to state academic standards.
- Well-designed curriculum software can engage students in solid academic curricula like never before. Online tests can deliver reports on children's progress instantaneously instead of weeks later, allowing teachers to customize instruction to student strengths and weaknesses.



Centennial of Flight Educator's Electronic Toolkit

EDUCATOR REPLY CARD

To achieve America's goals in Educational Excellence, it is NASA's mission to develop supplementary instructional materials and curricula in science, mathematics, geography, and technology. NASA seeks to involve the education community in the development and improvement of these materials. Your evaluation and suggestions are vital to our continually improving NASA educational materials.

Please take a moment to respond to the statements and questions below. You can submit your response through the Internet or by mail. Send your reply to the following Internet address:

http://ehb2.gsfc.nasa.gov/educats/educational_product

You will then be asked to enter your data at the appropriate prompt.

Otherwise, please return the reply card by mail. Thank you.

1. With what grades did you use the educational product?

Number of Teachers/Faculty:

___ K-4 ___ 5-8 ___ 9-12 ___ Community College

College/University— ___ Undergraduate ___ Graduate

Number of Students:

___ K-4 ___ 5-8 ___ 9-12 ___ Community College

College/University— ___ Undergraduate ___ Graduate

Number of Others:

___ Administrators/Staff ___ Parents ___ Professional Groups

___ General Public ___ Civic Groups ___ Other

2. What is your home 5- or 9-digit ZIP code? ___-___-___

3. This is a valuable educational product?

☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

4. I expect to apply what I learned in this educational product.

☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

5. What kind of recommendation would you make to someone who asks about this educational product?

☐ Excellent ☐ Good ☐ Average ☐ Poor ☐ Very Poor

6. How did you use this educational product?

☐ Background Information ☐ Critical Thinking Tasks
☐ Demonstrate NASA Materials ☐ Demonstration
☐ Group Discussions ☐ Hands-On Activities
☐ Integration into Existing Curricula ☐ Interdisciplinary Activity
☐ Lecture ☐ Science and Mathematics
☐ Team Activities ☐ Standards Integration
☐ Other: Please specify: _____

7. Where did you learn about this educational product?

☐ NASA Educator Resource Center
☐ NASA Central Operation of Resources for Educators (CORE)
☐ Institution/School System
☐ Fellow Educator
☐ Workshop/Conference
☐ Other: Please specify: _____

8. What features of this educational product did you find particularly helpful?

9. How can we make this educational product more effective for you?

10. Additional comments:

Today's Date: _____



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